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ABSTRACT

This publication reviews significant research in 1969 in the field of oral language in early childhood and reading. In general the paper discusses only those areas where these three topics intersect; thus detailed treatment is given only to language in early childhood education and language in relation to reading. Initial comments deal with research on language development itself. Part 1, "Language Development," deals with knowledge about language use, cross-cultural research, and adult-child interaction. Part 2, "Early Child Educatien," discusses classroom interaction, program effectiveness, assumptions about language, tests, and teaching via television. Part 3, "Language and Reading," considers phonological competence, syntactic and semantic competence, and the problem of matching reading materials to the child. An eight page bibliography listing all the works referred to in the body of the paper is appended. (FWB)

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LANGUAGE IN EARLY CHILDHOOD AND READING : A REVIEW FOR 1969/70

by COURTNEY B. CAZDEN

AL 002 601

Foreword

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A. Hood Roberts, Director
ERIC Clearinghouse for Linguistics
May, 1970

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Introduction

Language in Early Childhood and Reading: A Review for 1969/70[1]

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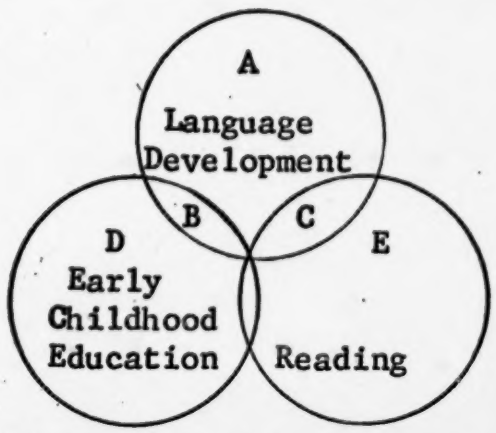
This review of educationally significant research in 1969 covers the field of oral language in "early childhood and reading." Relationships among the three topics are shown in this diagram:



Of the possible subtopics, I will discuss in detail only language in early childhood education (B) and language in relation to reading (C), with a few initial comments on some research on language development itself (A). I am assuming that the general areas of early childhood education (D) and reading (E) will be covered in papers prepared for the ERICs at the University of Illinois and University of Indiana respectively. I also assume that social class and ethnic differences in child language will be covered in papers written for the ERIC at Teachers College, and/or in other papers for the ERIC Clearinghouse in Linguistics by Bruce Fraser (on non-standard dialects) and John Francis (on bilingualism).

This review concentrates on research reported (at conferences or in journals) during 1969, but also includes a few items from 1968, 1970, or "in press."

[1]Commissioned by the ERIC Clearinghouse in Linguistics, Washington, D.C. Preparation of the review was aided by a grant from the Ford Foundation for an analytical survey of preschool language programs. I am grateful to Nancy Friedman for help with the section on "Language and Reading," and to Kenneth S. Goodman for his critical comments on an earlier draft.

Language Development

Language development continues to be a focus of intense work and theoretical controversy. To review this field in detail would be a large task in itself. I will only refer to review articles which appeared during 1969, welcome the inauguration of a new series of monographs, and then comment on several special aspects.

The Handbook of Socialization Theory and Research includes a chapter on "The Acquisition of Language" by Jenkins (1969); other chapters in the same volume include sections on language - e.g. a section on "the place of verbal responses in social learning" in Gewirtz's (1969) chapter, "Mechanisms of Social Learning." Vol. III of the second edition of the Handbook of Social Psychology includes a review by Miller & McNeil (1969) of "Psycholinguistics" which has a section on "developmental psycholinguistics." Part II of the 69th NSSE year book, Linguistics and School Programs has a chapter on "Language Acquisition and Development in Early Childhood" by John & Moskovitz (1970). 1970 should see publication of the new edition of the Handbook of Child Psychology with a lengthy review of language development by McNeill (in press a), and the expansion of this chapter into a separate book (McNeill, in press b).

During 1969, the MIT Press began publishing research monographs on language development. Three have appeared - Menyuk (1969); C. Chomsky (1969) and Bloom (1970). At least one more is forthcoming: Bellugi-Klima (in press). Menyuk's (1969) book is a report of her research on the language of normal and deviant children over several years, some previously reported in journal articles. The other three books are adapted from doctoral dissertations at Harvard (Chomsky and Bellugi-Klima) and Teachers College (Bloom). Chomsky's monograph is an all-too-rare example of research on aspects of language which develop after age six: e.g. understanding the subject of the verb go in I asked Tom to go versus I promised Tom to go. Both Menyuk and Chomsky's research are cross-sectional, while Bellugi-Klima's study of "how children learn to say no" and Bloom's study are longitudinal reports on three children each. Bellugi-Klima's data comes from the project initiated by Roger Brown which remains the best source for spontaneous mother-child interaction during the language-learning years. Bloom's work is notable for the best

data of any child language research on the non-linguistic context for each child utterance.

LaCrosse et al have written a monograph-length review of current research and educational practice in the first six years of life. Their section on language (in press, pp. 53-55) concludes with eight recommendations. They are quoted below with my comments on each.

> 1) "Language has too readily been incorporated into one theoretical perspective or another. Our opinion is that the field lacks a good natural history of language and that the best way to gain one is to move out of the laboratory into the field. We need to compile samples of language from a great variety of children in a great variety of settings. We suggest that this compilation take place in those settings which are the natural milieu of the child: the nursery, playground, nursery school, at home with his parents and siblings, etc."
>
> Without arguing the merits of theory, I agree that we need observations. See work of Horner and Brown described below.
>
> 2) "Detailed studies of language in natural settings should lead to experimental testing of hypotheses."
>
> Carefully controlled manipulative experiments which test hypotheses about environmental assistance are all too rare.
>
> 3) "We would not recommend preferential funding of structural psycholinguistic studies. The manpower already invested in this area is fairly adequate relative to other areas of possible investigation. Also, its relevance to school programming is questionable, at least in the foreseeable future."
>
> Admittedly, basic research on the child's acquisition of grammar is an area of intense activity and probably needs the least encouragement. See Lavatelli (1970) for one suggestion for incorporating specific syntactic structures (Bellugi-Klima & Hass, in press) in a pre-school curriculum.
>
> 4) "We need more research on the implications of bilingualism for early cognitive development and schooling."
>
> This is the focus of J. Francis's review.
>
> 5) "In addition to studies of bilingualism, investigation of dialect differences is also important."
>
> This is the focus of B. Fraser's review.
>
> 6) "Another area which clearly needs additional work is analysis of beginning reading. Pre-reading skills might well go beyond variables which are traditionally placed in the area of language research; we would move into various sensori-motor processes in addition to vocabulary and comprehension."

This is the focus of ERIC at the University of Urbana. And see section on "Language and Reading" below.

7) "Language has been studied by different researchers as a tool for thought, for communication, and in relation to reading. Unfortunately these studies are on different groups of children. Our suggestion is that a "language-as-a-tool" survey would be very fruitful in that it could study these important language functions in the same sample of children. A programatic study would yield a fuller understanding of the organization of language functions within the child."

This is an astute observation and a very important recommendation.

8) "No area of research can progress unless it has adequate measuring instruments for evaluating subjects before and after intervention."

See section on "tests" below.

We turn now to three special aspects of language development research: the child's acquisition of knowledge about language use; cross-cultural research on "the acquisition of communicative competence," and the antecedents of language development in the child's interactions with others.

Knowledge about language use

In an influential but still unpublished paper, Hymes (in press) has called for research on "communicative competence" - on what children know about the rules of language use as well as of language structure. To date, there is very little such research, but 1969 did see encouraging beginnings.

Weeks has begun to answer such sociolinguistic questions as:

> What does a child internalize about speaking, beyond rules of grammar and a dictionary? How and when does a child born into a speech community learn the speech varieties of his community? How and when does a child learn the appropriate ways of signalling local role-relationships? What effect does cultural background have on the acquisition of speech registers? (1970, p. 24).

In a longitudinal study of three preschool children from college-educated families, Weeks looked for evidence of speech "registers" which she defines as varieties of speech in the repertoire of a single speaker which contrast with unmarked utterances and which thereby "convey information or emotion beyond that conveyed by the words alone" (Weeks, 1970, p.23). She identified ten registers in the speech of her three subjects: three aspects of intensity (whisper, softness and loudness); two aspects of enunciation (clarification and fuzzy speech); and five aspects of baby talk (high pitch,

grammatical modification, phonetic modification, exaggerated intonation and mimicry). She also looked for their functions, co-occurrences and social contexts of use. Here are two examples from one child:

> From about 2;6 to 3;1, John whispered to his parents if they were visiting someone and he wanted to make a request but was too timid to ask for himself. If he wanted a drink of water, for example, he whispered this to his parents and expected them to make the request for him. He now uses whispering when he's concentrating, principally in private speech, where Fred uses softness. At 3;4, John is just beginning to grasp the concept of secret-keeping but has never used whispering for secrets (p. 28).
>
> The youngest age at which the clarification register was recorded was 1;11. This seemed to be about the age at which John began to get indignant when people could not understand him. In this example, John clarified his statement principally by putting a noticeable boundary between each syllable (p. 29).

Carlson & Anisfeld (1969) found similar characteristics in the speech of Carlson's son, age 21-33 months. His speech which seemed not intended to elicit a response tended to the extremes of loudness (whispering or skrieking) and sometimes had deviant pitch patterns such as shrieking or singing. And at 31 months, he used "fuzzy enunciation" and a very soft voice "in situations in which he knew he would probably be forbidden to do what he was about to ask" (Carlson & Anisfeld, 1969, p. 575).

Cross-cultural research

In 1969, the first four doctoral theses were completed as part of the long-range research project on the cross-cultural study of the acquisition of communicative competence at the University of California at Berkeley, directed by Ervin-Tripp (speech), Gumperz (anthropology), and Slobin (psychology). Three theses were on language acquisition: by Luo children in Kenya (Blout, 1969); by Samoan children (Kernan, 1969) and by Teneljapa Tzeltal children in Mexico, (Stross, 1969). The fourth thesis, by Mitchell (1969), was on speech function in the Black community in Oakland, California, although some data on child language from her research has also been analysed (Slobin, 1968).

This research project, based on Hymes' definition of communicative competence, has attempted first, to discover which aspects of language acquisition are universal across languages and which are language-specific, and second, to broaden research on child language to include questions about

language use as well as language structure. While Blount, Kernan and Stross all worked within the guidelines of the project manual (Slobin, 1967), each necessarily selected different specific questions for intensive study.

Kernan asserts that "the ontogeny of his [the child's] ability to express meanings is the ontogeny of his acquisition of his language" (1969, p. 123). He sought to describe the meanings which Samoan children express as they gradually acquire language, and he contrasts three models of gramatical analysis for this purpose: pivot grammars previously "discovered" by some investigators of American child speech; a hierarchical phrase structure grammar used by Bloom (in press); and case grammar worked out by Charles Fillmore for adult English and not previously applied to child language. Kernan then develops his own adaptation of Fillmore and concludes:

> The point is not that semantics rather than syntax should be the proper area of investigation. Nor is the point that semantics as well as syntax should be studied. Rather, the claim here is that to understand the process of acquisition, and even to write a formal model of the child's syntactic ability at any stage of his acquisition of language, semantics must be considered and must be part of that model (pp. 124-125).

Stross is interested in the "cognitive processes that underlie language use and language learning. . .such as generalization, differentiation, addition, substitution, transformation, association and feedback" (1969, pp. 6-7). To study these processes, he focused on the child's acquisition of names for the wide variety of plants which are economically important in Tenejapa. He wanted to find out the order in which plant names were learned, which attributes were used in identification by children of different ages, what children called plants whose names they didn't know, and who taught them names and how. He constructed a learning task by selecting a plant trail. "My assistant would walk ahead with the child, pointing out prearranged plants and asking the child to identify them while I stayed behind writing down the responses" (p. 99). 25 children from 4-13 years old, and 10 adults from 15 to 60 years old were taken along the trail, one at a time. Stross concludes that the order of acquisition of names follows two dimensions: location - from those seen in the house to near the house and then to more distant plants; and cultural significance - from the most important to least. There is also regular change in the attributes by which children make their identifications: first by the fruit; then by location;

and only later by the various growth stages, conditions of health, and morphological attributes other than fruits. In general, learning proceeds to greater differentiation of categories, but both differentiation and generalization proceed together.

In his study of grammatical development, Stross gave an imitation test of 54 model sentences to preschool children and analysed the deviations between their imitations and the models. Because of "the surprising number of interferences in imitation from words and phrases belonging to earlier models, sometimes twenty or more sentences previous" (p. 196), Stross, hypothesizes that children may have a more powerful aural imagery, analogous to eidetic visual imagery, which not only operates in imitation test performance but may also aid language learning during the "critical period" when the imagery is strongest.

Blount focusses on the social setting in which child language is both generated and collected. He shows that understanding the social context of language use is not simply another part of what children learn as they become nature members of their culture. In addition, the culturally-specific sociolinguistic rules of language use will affect the extent to which the child's grammatical competence, or underlying knowledge, will be expressed in, and therefore can be inferred from, his performance in actual speech behavior:

> In the present study, any description of competence must follow an amount of the major rules governing children's speech. The basic rules are: (1) children do not interact with strangers; (2) children interact only ritually with visitors; (3) children interact formally with adults in the presence of other adults, according to a prescribed manner; and (4) children interact "freely" (with minimum constraint) with peers (p. 43).

The combined effect of these social rules is to depress the child's speech in the researcher's presence, and make the researcher's assessment of the child's knowledge of his language very difficult.

The social constraints which regulate the child's speech and thereby also the data collection process affect not only quantity but types of utterances as well. In Luo grammar, there are two basic types of sentences: predicative (or narrative) sentences with noun-phrase and verb-phrase (Moma went to work.), and non-predicative (or equational) sentences with noun plus noun (It shoes.), or noun + Adjective (They black.). In Blount's protocols,

non-predicative sentences seemed to develop before predicative constructions, but this may be more a function of social constraints than of limitations in the child's grammar:

> The major restriction on the children's speech by the controlled conditions is that most of their speech in our presence consisted of answers to questions, particularly to "what" and "where" questions. The expectations of the adults as to the linguistic ability of the children, i.e. the adults' cultural attitudes, then had an effect on the type of speech provided by the children. The early appearance of non-predicative constructions in the speech record is directly attributable to this interplay between the child's capacity and the adults' attitudes. This is not to argue that there is a direct one-to-one correspondence between the acquisition of language by the children and the adults' expectations, but the latter had the effect of channeling the children's speech in the contexts in which the speech was collected (pp. 154-155).

As we will see later in this review, questions about the relation between eliciting context, sociolinguistic rules, and inferences about competence are being raised here in the United States about research on the language of minority-group children.

Adult-child interaction

The nature of the language-learning environment is a research topic of major importance for two reasons: in basic research on language acquisition, we want to know what aspects of his environment provide assistance to the child, and in planning educational programs for disadvantaged children and parents, we assume (and it remains only an assumption) that we could improve the school performance of the lower-class child if we knew how his home environment differed from the higher achieving middle-class child.

For instance, the Institute for Development of Educational Activities (IDEA) engaged the Gallup International research organization "to provide new information about the influence of the home environment on first grade children" (Gallup International, 1969a; 1969b). Gallup interviewed 554 first grade teachers and asked them to describe the home conditions of their best and poorest students. One question asked what the teacher wished "parents would do at home to make the child's educational opportunities more effective." The two most common answers were "expose them to reading and books" and "talk and listen to the child." Gallup also interviewed the

mothers of 1045 first grade children to discover home factors which differentiated the successful and nonsuccessful children. Being read to regularly, from age 2 on, was one of the most distinguishing features of the successful children's home lives.

These results are not new or surprising. In fact, IDEA's work simply documents again the conventional wisdom. On the basis of previous evidence of the value of reading to children, the Cornell story reading program was developed (Macklin et al, undated). Negro and white teenage girls were trained to go after school as readers to the homes of children between the ages of 1 1/2 and 2 1/2 years. Each teenager read to 4 children, for 20 minutes each, daily. No evaluation data is given, but Macklin et al provide a good discussion of the problems encountered with both the 2-year-olds and the teenagers.

Fortunately, there has also been research providing finer-grained analyses of adult-child interaction. McCaffrey's progress report (1970, App. F.) includes an 81 item bibliography on this topic. Details of twelve interaction studies are given in chart form on the next four pages. The seven studies in the bottom part of the chart include a social class and/or ethnic group comparison. Even where the researcher's intent is not to explain the lower educational achievements of lower-class children, they expect to find the contrast in environments informative. Not included in the chart is an important longitudinal study now underway at Educational Testing Service (ETS, 1968, 1969). 2000 children in Alabama, New Jersey, Missouri and Oregon will be studied from age three through third grade. The children will all be from English-speaking backgrounds, Black or White. Tests will be combined with observations of interactions at home and in school. The principal aims of the study are to:

> identify the components of early education (Head Start and other preschool and primary programs) that are associated with children's development
>
> determine the environmental and background factors which influence such associations
>
> describe <u>how</u> these influences operate

In order to provide information that will contribute to

> educational planning and improvement of early education programs
>
> general social planning for the lower socioeconomic groups

psychological theories of child development

measurement practices in the assessment of young children and their environments (1969, p. 9).

WITHOUT SOCIAL CLASS COMPARISONS

Author(s)	Focus	Subject	Data	Findings	Comments
Horner (1968)	functional analysis of speech in natural situations	2 lower-class Black children, aged 3 years old	transcriptions of recordings from wireless microphone which each child wore indoors and outside for one weekday and one weekend day	1) Both children's most frequent interlocutor is mother due to very high rate of verbal behavior during brief periods. 2) Functional analysis into mands (demands and requests) and tacts (statements) show common age-appropriate behavior with adults and individual differences with peers.	A pioneer in linguististic ecology; in accord with LaCrosse et al's recommendation #7 above, it would be good to have both functional and grammatical analysis of the same children's speech
Mehan, S. (1969)	how mother and children achieve communication	1 child, 17 mos. old	75 seconds of video tape of spontaneous mother-child interaction	the mother's attempts to interpret her child can be inferred from her talk. It's difficult for an observer to assign meaning to the child independent of the mother's interpretation.	a pilot attempt to apply the theory of ethnomethodology (Cicourel, in press) to mother-child interaction
Brown, Cazden & Bellugi (1969)	environmental assistance to the acquisition of grammar	longitudinal study of 3 children, 18-48 mos.	transcriptions from audio tapes of spontaneous family talk	1) Variation in the frequency with which particular constructions are modeled by the parent is related to the sequence of emergence in the child's speech. 2) The benefits of parental expansions of children's telegraphic utterances were not confirmed either in a manipulative experiment nor in an analysis of the acquisition of noun and verb inflections. 3) There is no evidence for the role of reinforcement.	The most detailed analysis to date of the child's language environment, but only in relation to the acquisition of grammar.

WITHOUT SOCIAL CLASS COMPARISONS (continued)

Author(s)	Focus	Subjects	Data	Findings	Comments
Friedlander, Cyrulik & Davis (undated)	family language interactions in the home environments of infants	pilot study of homes of 2 12-month old infants of same social class	time-sampling, voice-actuated audio tape recorder	1) Of all talk in the home, extra-familial sources (TV, radio, guests) totaled 70% for one family but only 25% for the other. 2) In both families, 70% of utterances directed to the infant were from the mother and 25% from the father. 3) Tuitional modeling, imitation and questions were the major types of parent utterances. Expansions and reinforcement were infrequent.	Important use of recording technology to minimize effect of the observer.
Phillips, J.R. (1970)	comparison of mother's speech to child and to other adults	36 pairs of mother and 8-33 month-old boys from hospital staff families	for 30 pairs, transcriptions of 15 minute interviews with adult + 15 minute spontaneous talk with child; for 6 pairs, sound spectrograph analysis of 5 sentences from story read by mother to adult and then to her child.	1) Mother's utterances to adult were longer and contained more verbs, modifiers and function words. Her utterances to child become longer and more complex as child develops from 18-28 mos. 2) When reading to their children, mothers used higher frequencies, a greater sample of frequencies, and a longer total utterance time (both voiced and unvoiced).	Finding #1 confirms and extends Slobin's (1968) report that mothers simplify speech for the young child. Finding #2 is the first study of prosodic or intonation features of speech addressed to child.

WITH SOCIAL CLASS COMPARISON

Author(s)	Focus	Subjects	Data	Findings	Comments
Baldwin, C.P. (1969)	How mothers & children exchange information	23 pairs of mothers and 2-yr.-old children from Harlem (LC & MC black) and Wash. Sq. (MC white)	audio tapes and observer's notes of spontaneous interaction in a laboratory playroom and an interview with the mother	Relatively few significant differences between the Harlem and Washington Square mothers	Reporting of results is confused by combining LC and MC mothers in "Harlem" sample
Baldwin, A.L. & Frank (1969)	syntactic complexity in mother-child interaction	23 pairs of mothers and 3-yr.-old children from Harlem (LC & MC black) and Wash. Sq. (MC white)	audio tapes and observer's notes of spontaneous interaction in a laboratory playroom and an interview with the mother	1) all mothers reduced grammatical complexity from interview with adult to talking with child. 2) Mother's complexity higher than child's. 3) No difference in complexity of Harlem vs. Washington Sq. mothers in interview.	Same as above
Bee, H.L. et al (1969)	72 LC and 38 MC mother and child pairs	audio tapes of waiting room talk, structured problem solving situation, and interview with mother	social class differences in maternal teaching strategies and speech patterns	Many social class differences such as: LC mothers more disapproving and controlling in the waiting room; MC mothers made more nonspecific suggestions and gave less negative feedback in the problem solving situation; MC mothers used more complex language.	See discussion below of questions raised by Sroufe about this kind of research
Hess et al (1969)	follow-up during first 2 yrs. of school of children studied at	158 of original 1163 families all Negro, from 4 SC groups	tests and school records	A few of the many findings are: 1) measures during preschool and follow-up study more related to standardized achievement tests than to teachers' ratings; 2) preschool maternal	Final report of a large and important project.

WITH SOCIAL CLASS COMPARISON (continued)

Author(s)	Focus	Subjects	Data	Findings	Comments
Hess et al (1969) (cont'd)	age 4 (Hess et al, 1968)			variables which had been related to child's preschool performance also significantly related to school performance. 3) school performance more related to maternal variables for girls than for boys.	
Schoggen (1969a, 1969b)	complete record of child behavior in proximal environment	24 children in 4th year of life, mixed in SC, rural-urban, race and sex.	Narration by observer, dictated into shielded mike 7-10, 40-50 min. observations in each child's home (198 in all).	Records so far analysed only for Environmental Force Units (EFU): any action directed by a social agent in the child's environment which penetrates the child's psychological world. Mean rate of EFUs per min was 1.58 for LC-ur-ban, 1.56 for LC-rural, and 1.83 for MC-urban. The % of EFUs with mother as agent was 53, 47 and 59 for the three groups respectively.	Important study based on ecological psychology of Barker & Wright. Schoggen plans further analysis (see Brown below) and has also duplicated all 198 records for use by others.
Brown, E.A. (1969)	comparison of the behavior objects (persons, pets or objects) used by children	one child from each of Schroggen's 3 groups	3-4 records for each child, sellected for similarity of behavior settings	Children from LC homes 1) dealt with fewer objects; 2) transacted more behavior with their mothers 3) were provided with fewer nutritional objects; 4) exhibited less verbal behavior; and 6) used objects according to their intended purposes less often (Brown, 1969, p. 47).	Same as above
Gerwirtz & Gerwirtz (1969)	comparison of care-taking environments, especially for stimuli-behav-	Israeli infants at 8, 16, 24 and 32 weeks in 4 environ-	Behavior coded every 30 sec. in pre-established categories.	Preliminary analysis of an interaction sequence for one 32-week old child in each environment: 1) the conditional probabilities (cps that a child's vocalization will	Important step toward sequential analysis rather than simply categorizing

WITH SOCIAL CLASS COMPARISON (continued)

Author(s)	Focus	Subjects	Data	Findings	Comments
Gerwirtz (cont'd)	ior contingencies	ments: residential instruction, Kibbutz, MC single-child family, MC-multiple child family.		be followed by adult talking range from .52 to .81; 2) cps that infant vocalization will follow adult talking range from .09-.15. 3) child's predominant response is smiling while adult's predominant response is in same modality as child.	and counting types of responses.

In the last year, criticism of research which compares children or families from different subcultural groups has increased. Sroufe has written "a methodological and philosophical critique" of intervention-oriented research, using the work of Bee et al (1969) as a case in point. "Programs in this area generally include some assessment of deficits in lower-class children and limitations in some aspect of the lower-class family environment, and a causal connection between the two is implied" (Stroufe, 1970, p. 140). Sroufe raises four questions. First, do all aspects of the assessment situations carry the same meaning for all subjects? Are they functionally equivalent in the behavior they elicit? He mentions such aspects as race of examiner, ability to understand dialect of examiner, reaction to being in a university waiting room, perception of the task and effect of this on mother's directiveness of her child. Second, is the distinction between correlation and causation observed? Third, is the distinction between a construct and a measure of that construct observed?

> As just one example from the Washington Project...it was concluded that lower-class communication patterns were less complex and less rich than those of the middle-class mothers. But number of clauses per sentence is not the only possible measure of linguistic complexity, nor are number of words and adjective/verb ratios the only measure of richness (Sroufe, 1970, p. 142).

Fourth, are the values of middle-class researchers preventing "objectivity"?

> The question of whether middle-class investigators can make valid categorizations and ratings on the behavior of lower-class, especially black, subjects should at least be raised.
> ...unwitting bias is not ruled out by the establishment of high interrater reliabilities. Such agreement may only indicate similarities in meaning system, point of view or training (Sroufe, 1970, p. 142).

Finally, Sroufe demonstrates the role of value judgments by offering an alternative interpretation of Bee's data.

The importance of the questions raised by Sroufe cannot be overestimated. Sroufe acknowledges that social class differences in performance measures and communication patterns exist (1970, p. 141). Baratz & Baratz (1970), whose critique is similar at many points to Sroufe's, also do not question the existence of social class and ethnic differences. What both Sroufe and the Baratzes question is the equation of difference with dificiency and the inference that the appropriate response to these differences is to

attempt intervention, either in the child in school or in the family at home, to remake the child's behavior patterns so that he will fit the middle-class standard and the present school. In their answer to Sroufe, Bee et al say that "We were specifically charged with the task of evaluating the impact of the local Head Start program, whose professed aims included the preparation of children for the existing school system as well as the development of more general cognitive competencies" (1970, p. 147). Baratz and Baratz argue strongly that we should adapt the school to the unique cultural patterns of the children, and "utilize the child's differences as a means of furthering his acculteration to the mainstream while maintaining his individual identity and cultural heritage" (1970, p. 47). Unfortunately, present research on the home environments of lower-class children does not seem to be contributing to our understanding of how that might be done because it is designed to identify weaknesses rather than strengths.

When a school does attempt this kind of cultural adaptation, questions of "objective" evaluation arise in reverse. A case in point is the controversy over the evaluation of the Rough Rock Demonstration School, an elementary boarding school turned over by the Bureau of Indian Affairs (BIA) to the Navajo tribe. An evaluation of Rough Rock was made for OE by Donald Erickson, (Erickson & Schwartz, 1970). The evaluation compared Rough Rock unfavorably with another nearby elementary boarding school still run by the BIA. Already Erickson's report has been severely criticized by a group of anthropologists who have worked with Rough Rock from its beginning (Bergman et al, 1969). And now their critique has been criticized and the original Erickson report supported by Murray Wax (1970), long a sympathetic observer of Indian education. I do not know if any evaluation of the Morgan school in Washington, D.C. under the direction of Kenneth Haskins was made. But it is easy to imagine how the Rough Rock experience could be repeated there.

Mixed up in these controversies are intellectual questions about the nature of objectivity in cross-cultural research, and political questions about the status and demands of minority groups in the U.S. in the 1970's. I doubt if it is easy for any researcher to keep his responses on these two bases sorted out.

Intensive educational focus on language development in early childhood education is a phenomenon of the past ten years. It is the result of two complimentary and related pressures: the presence in preschools of children with apparently greater need for help in this aspect of behavior, and increasing attention by psychologists to the role of language in cognitive activity. Before that, language was more the medium of communication than an explicit curricular activity. Detailed comments follow on five topics: (1) studies of classroom interaction; (2) generalizations about program effectiveness; (3) assumptions about language underlying the newer programs; (4) the need for criterion-referenced tests of language development and use; (5) the advent of teaching by television on "Sesame Street."

Classroom interaction

Classroom interaction has been studied for some time. See, for example, the anthology now available of classroom observation instruments (Simon & Boyer, 1968). But most research with those instruments has been done in the more recitation-like settings of classrooms for older children. Observation becomes much more difficult in early childhood classrooms where interaction patterns are less structured, more talk is going on simultaneously, and the general noise level makes overhearing conversation very difficult. Either the observer follows one participant so closely as to become a very obtrusive measure, or the participant must himself wear a wireless microphone. Even in the latter case, which might seem ideal, the observer loses the nonverbal context which is frequently necessary for interpretation. Despite all the problems, some research has been done. Seven studies appeared in 1969 of interaction in preschool, kindergarten or first grade classrooms. Of the seven studies, four are of teacher talk, two of both teacher and child talk, and one of a relationship between the two.

Katz writes informally of her observations in Head Start classrooms: "As we observed in classrooms, it began to appear to us that a very large proportion of teacher's verbal responses to children had the function of ending a child's thinking, rather than extending it" (1969a, p. 1). She is now

trying to operationalize the ending-extending contrast and study the frequencies of, and situational influences on, categories of teacher talk in preschool classrooms.

Berry et al (n.d.) studied the talk of four preschool teachers using a system of "cognitive stimulation coding categories (CSCC) adapted from the work of Hess et al (1968) on maternal teaching styles and of Carolyn Stern at UCLA. Briefly, the four teachers differed in the style and frequency of both cognitive and control speech. The teacher in the classroom with the most "structured control," the Montessori classroom, used the least direct verbal control. In the most "permissive" classroom which provided the least structure, the teacher spent least time on cognitive statements. In all four classrooms, cognitive statements were made most frequently to large groups, whereas positive feeling was most often conveyed to individuals. Berry et al comment: "There seems to be a polarization of behavior: on one side cognition emphasized in a school-like atmosphere, deemphasizing emotive individual interaction, or on the other side absorption with the individual to the exclusion of cognitive stimulation" (Berry et al, n.d. p. 14).

Talbert, an anthropologist, observed in kindergartens in two Negro schools to compare actual interaction patterns with the ideal expressed by the teachers. The teachers claimed that once they could solve discipline problems and get the children working as a group, individualized instruction would take place. Talbert therefore hypothesized that observations made in September, January and April would show increasing frequencies of positive, individual teacher-pupil interaction with more children. Instead, in both classrooms, the absolute number of interactions decreased from September to April, the proportion of positive responses decreased, and the number of children (predominatly boys) on the periphery of the teaching process, with few interactions during the time observed, increased. Talbert wonders at "the constraints operating upon the teachers which prevent them from acting as they feel a good teacher ought" (1968, p. 12).

Rainey studied the style-switching of one Head Start teacher by listening for four indicators of a switch from formal to informal style: you-ya them - 'em; have to or got to - hafta and gotta; -ing - in' as in goin'.

In three situations (story-telling, shared story telling and giving directions for going home), the teacher used informal features when she interrupted the story or directions to make personal comments to individual children and lessen the distance between herself and the children. This is only a pilot study, but it is unusual in going beyond the literal meaning of teacher statements and, like Weeks's study of child speech described above, looking at the social and emotional meaning conveyed by features of pronunciation and intonation.

Two studies include both teacher and children. Siefert used the Oscar interaction instrument developed by Medley (see Simon & Boyer, 1968) to compare aspects of verbal interaction in two of Weikart's preschool classrooms: a "language" program using the Bereiter-Engelmann curriculum and a "cognitive" program developed in the Weikart project. Weikart's pre-post evaluation data have shown that both programs produce very high gains on the Stanford-Binet, and Seifert hoped to find out whether and how the programs differed in actual classroom processes. His only significant finding was that the "language" program had denser talk per minute. Other differences - in amount of teacher feedback, procedural statements and expression of feeling, and pupil initiation of statements - were not significantly different. Seifert concludes: "In spite of obvious superficial differences in the goals and activities of the two programs, the teachers use much the same style in talking with their pupils, at least during group teaching situations, and pupils improve their general cognitive ability about the same." Of course, this generalization is limited to the aspects of interaction Seifert measured and to gains in cognitive ability that are tapped by the Stanford-Binet.

Hunter used a modification of Flander's interaction scheme (see Simon & Boyer, 1968) to study the verbal behavior of 22 first-grade teachers as they taught science. The experimental group of 11 teachers had taken an in-service course in teaching new science programs during the previous year. As expected, pupils in the experimental classrooms did talk more during science lessons, but Hunter did not find the expected differences in quantity or quality of teacher questions, or in pupil initiation of talk to either the teacher or other pupils. Hunter concludes that "Process change - innovation

in the ways in which teachers interact with pupils and pupils interact with pupils - will not necessarily ensue from changes in curriculum content" (1969,, p. 42).

Alone among the seven studies, Jester & Bear looked at the relationship between teacher and child talk, between the vocabulary teachers use in the classroom and the percentage of that vocabulary understood by their students. 16 volunteer kindergarten and first-grade teachers were tape-recorded via a wireless microphone for ninety minutes during a normal day's activities. Half the teachers were from lower-class families, half from middle-class families. Six children from each classroom were then given a vocabulary test made up of words from the teachers' talk and so constructed that "estimates could be made of the proportion of words used by a specific teacher which the children in her classroom know (Jester & Bear, 1969, p. 2-3). In general, the percentages of teacher words known by the children out of context on a test was high, ranging from 55-96%. This could mean either that the teachers were doing a good job of adapting their speech to their children, or that they could use more difficult words. While the proportion of words known also varied with grade and social class of teacher and child, these results are not consistent enough to be clearly interpretable.

A detailed critique of these studies would have to point out unanswered questions about the research designs. Consider the last two, by Hunter and Jester and Bear. Why should we think that Hunter's control teachers were like her experiemental teachers except for the effect of the in-service course? How does she justify combining teachers who took courses for six different elementary science programs? And what was the content of those courses anyway? In Jester & Bear's sample, is there an interaction between social class of teacher and of child such that lower-class teachers had lower-class children who may know fewer words? Is there a differential effect of a wireless microphone on middle-class versus lower-class (and probably more linguistically insecure) teachers? I am not emphasizing these questions in this review because all of the studies can be considered initial attempts in an important direction - namely, to get below the level of pre-post evaluation to observations of verbal life in classrooms. See also Katz (1969b) on this point.

The importance of all these studies rests on the implicit assumption that the quantity and quality of teacher and child talk is an important cause of the ultimate effect of school on children's intellectual growth, and therefore an important source of teacher variance within any category of teachers. While we do not know how this effect is produced, there seems every reason to continue to try to find out.

Program effectiveness

Parker et al (n.d.) have prepared an excellent overview of most of the experimental preschool programs which focus on language and cognitive development. Detailed reports on each program are given, and very thoughtful comments made and questions raised. See also John & Moskovitz (1970).

There is mounting evidence that where program effectiveness is measured by gains on standardized cognitive tests such as the Stanford-Binet, those programs which set out to teach children particular cognitive and language skills achieve the greatest gains. As the children in both the experimental programs and their contrasting "controls" go into Kindergarten and the primary grades, the test-score gap between them lessens, but the experimental children retain some advantages from their special preschool experience even in public schools as they are now. Examples of important reports of effective programs are Weikart (1969) and Karnes (1969). See Bissell (1970) for an analysis and discussion of these and other studies. By contrast, the controversial Westinghouse study of Head Start (Circourelli, 1969) found that less structured programs with less explicit focus on language had less effect. But even here, Smith & Bissell's (1970) reanalysis of that research concluded that Head Start did have an educationally significant effect on the Metropolitan Readiness scores. Since those scores are frequently used in grouing children for beginning reading instruction, the snow-balling benefits of those initial differences could be considerable.

There is not yet good evidence on the differential effects of one structured program as opposed to another. In Karnes' comparative research, her "ameliorative" curriculum and the Bereiter-Engelmann program both had more effect on children than three less structured alternatives. Weikart found that his three curricula were equally and very highly effective. It may be,

as Weikart and Lambie suggest (1969), that quality control produced by the "staff model" is more important than the particular curriculum adopted. And/or it may be, as Parker et al suggest (n.d., p. 122) that lack of more specific criterion-referenced tests is preventing true differences from being found. Given better evaluation measures it is also possible that other curricula would be evaluated quite differently. For example, if a goal for language education is the child's asking of productive questions, and if one had a way to measure this outcome, it might be the case that the "structured" programs would not be as effective as environments in which children select their own activities such as more traditional preschools or the English Infant School model. (See Cazden, in press a, for a first-hand report on language programs for young children in England.)

Assumptions about language

As Parker points out, a conceptual basis for language education based on current psycholinguistic and sociolinguistic research on child language has yet to be developed:

> Nearly every preschool program with the possible exception of the Montessori programs attempts to effect "language" skills of the participants; however, only a few offered <u>any</u> conceptual analysis of language behavior to guide their curriculum development. When a conceptual or theoretical frame of reference existed for a language program (e.g., Peabody Language Development Kit) it was based on a dated model of psycholinguistic functioning. Even though many current theoretical issues in psycholinguistics seem remote from education, an important contribution to education will be made when educators draw from contemporary developmental psycholinguistics in constructing preschool language programs (see McNeill, 1970) (Parker et al, n.d., p. 120).

See Hass, (1969) and Cazden (1970) for preliminary attempts to work out such a rationale.

Because the conceptual basis is so weak, the ad hoc assumptions underlying many of the programs are particularly vulnerable to criticism. Baratz and Baratz (1970) criticize these programs on theoretical grounds as based on a deficit or social pathology model of cultural differences. From his extensive research, Labov asserts that programs like the Bereiter-Engelmann curriculum damage children both by affecting the teacher's attitudes toward

the child and by increasing later alienation from school. More positively, he states:

> The concept of verbal deprivation has no basis in social reality; in fact, Negro children in the urban ghettos receive a great deal of verbal stimulation, bear more well-formed sentences than middle-class children, and participate fully in a highly verbal culture; they have the same basic vocabulary, possess the same capacity for conceptual learning, and use the same logic as any one else who learns to speak and understand English...
>
> There are undoubtedly many verbal skills which children from ghetto areas must learn in order to do well in the school situation, and some of these are indeed characteristic of middle-class verbal behavior. Precision in spelling, practice in handling abstract symbols, the ability to state explicitly the meaning of words, and a richer knowledge of the Latinate vocabulary, may all be useful acquisitions. But is it true that all of the middle-class verbal habits are functional and desirable in the school situation? Before we impose middle-class verbal style upon children from other cultural groups, we should find out how much of this is useful for the main work of analyzing and generalizing, and how much is merely stylistic - or even disfunctional (Labov 1969a, pp. 60, 64).

Reconciling the views of Labov and the preschool curriculum planners can only be done on the kind of psycholinguistic and sociolinguistic foundation which Parker calls for.

The pragmatic and atheoretical assumptions underlying "language intervention" programs are described very honestly by Risely and his collaborators (Risely, Reynolds & Hart, in press; Hart & Risely, in press) who work with behavior modification techniques.

> In all behavior modification research, there is either explicitly or implicitly a comparison between the level of behavior exhibited by the particular children being studied and the level of behavior exhibited by the majority of other children of the same age. Such a comparison also establishes the goal of our behavior modification effort -- to make the deviant child's behavior comparable to that of other 'normal' children...
>
> In our work with disadvantaged preschool children, we are not fortunate enough to be blessed with such a clear criteria for our behavior modification efforts. The problems of these children are stated in terms not of specific aspects of their current behavior, but rather in terms of the correlation between their present circumstance of segregated poverty and the unlikelihood of their being successful contributing members of our society many years hence.

> As an educational endeavor, our attempts to work with disadvantaged preschool children were thus handicapped by the lack of any specifiable educational goals. Society had presented us with a problem of unspecified dimensions without specifying any criteria by which we could measure the success of our efforts. In the face of this dilemma, we proceeded in the following manner. We selected children for our preschool from the more extreme levels of poverty or from the more severely disrupted homes in the neighborhood -- children who might have the least likelihood of future success in school and in society. We then simply asked: What skills might children need to enable them to learn that which the public schools are prepared to teach; and can we find ways to establish these skills? (Risley, Reynolds & Hart, in press, pp. 1-2).

Risely and his associates at the University of Kansas have used reinforcement - in the form of teacher attention, M&M's, or access to materials - "to teach children to talk more frequently, to talk only on some occasions and not to talk on others; to use appropriate social speech; to narrate longer and more complex accounts; and to readily match what another person had said or done" (Risley, Reynolds & Hart, in press); and to use more nouns, adjective-noun combinations, or compound sentences (Hart & Risley, in press). To Risley et al's credit, they do not pretend that they are affecting linguistic knowledge or cognitive structure. They only claim to have modified the language behavior of preschool children in the preschool environment. What effect such behavior modification has on future educability remains to be demonstrated.

Tests

Examples of problems with currently used tests and with the interpretations made of test results can be found in reports by Karnes (1969) and Cicourelli et all (1969). Both Karnes and Cicirelli et al used the Illinois Test of Psycholinguistic Abilities to diagnose needs and evaluate progress. Karnes found that the disadvantaged children in her sample scored low on three ITPA subtests:

> Vocal encoding (now called verbal expression): The child is shown an object (e.g. a nail) and asked to "Tell me about it."
>
> Auditory-vocal-automatic (now called grammatical closure): a test of the child's knowledge of standard English noun and verb inflections. "Here is a bed. Here are two _____."
>
> Auditory-vocal association: an analogies test which taps children's knowledge of opposites. "A daddy is big; a baby is _____."

Karnes comments: "In addition to the specific aspects of language functioning measured, the ability to express oneself verbally is the common requisite for successful performance on these three subtests" (1969, p. 164).

Since scores on the vocal encoding subtest depend on how many ideas a child expresses about the object, use of the subtest must assume a common sociolinguistic norm about verbal display to an unfamiliar adult. The auditory-vocal-automatic subtest is clearly a test of the child's productive knowledge of Standard English morphology. And the auditory-vocal association subtest is more than a test of opposites; it assumes that the child understands the convention of parallel constructions and is thereby constrained from answering with other equally meaningful sentences such as The baby is sick. Finally, Karnes' comment invites confusion between ability and performance in these particular test situations. While her statement only says (accurately enough) that ability is necessary for successful performance, "necessary" easily becomes confused with "sufficient," and then absence of ability is all too frequently inferred from the child's failure to perform.

In the Westinghouse study, the Head Start children and their equally disadvantaged controls scored below the norms on three subtests: auditory association and grammatical closure as in the Karnes research, and auditory reception: the child is asked to say yes or no, or nod or shake his head, to questions such as "Do chairs eat?". In their specific recommendations, the authors comment that these three subtests correlate with school achievement and that

> since grammatical closure tests the ability to respond automatically with proper grammatic form, more intensive training in standard English appears needed. As basic language patterns of grammar develop quite early in life, this is an area where even earlier intervention might produce more effective and lasting results (Cicirelli et al, 1969, Vol. 1, p. 249).

Here the basic non-sequitur, and a shockingly prevalent one, is the leap from correlation to causation; that because use of standard English correlates with school achievement, it is a causal factor in that achievement and worth teaching for that reason.

Roberts (1970) has made an intensive analysis of four tests widely used to evaluate both language development and the effectiveness of programs which focus on language: the Peabody Picture Vocabulary Test (PPVT), the Illinois Test of Psycholinguistic Abilities (ITPA), the Wechsler Preprimary Scale of Intelligence (WPPSI) and the Metropolitan Readiness Test (MRT). She points out that while many of the subtests use evaluation techniques which have been used in the study of language acquisition, use in that research is very different from use on standardized tests:

> All of the above techniques are used to some degree in the study of language acquisition. Acquisitionists make use of verbal and non-verbal input to the child; they study response-types which vary in verbal-ness and open-ness. They employ imitation tests to measure linguistic competence of children. There are, however, three important ways in which their methods of assessing language development differ from those of the standardized testers.
>
> Acquisitionists use the tests to learn about the language of children rather than to fit children into predetermined categories. They design tests for the purpose of gaining insights into the developing linguistic system, rather than for the purpose of ranking children according to prescriptive norms. Acquisitionists are interested in children's mistakes insofar as these mistakes give insights into the mental processes of the children; thus, error analysis is an important tool of acquisitionists, while it plays little role in standardized testing.
>
> Acquisitionists control the linguistic content of the tests very carefully: a) They test specific hypotheses about particular structures of operations rather than general undefined notions of 'vocabulary,' 'comprehension' and 'meaning.' b) They only use structures which are known to be within the competence of the tested children unless the structures are the target of the testing. c) They are careful to eliminate semantic cues which might provide the child with redundant information that helps him to respond correctly without actually understanding the tested structure.
>
> Acquisitionists do not rely solely on test situations to assess language development. There is a strong tradition of observational study of children using language in natural conversation settings. Tests are used only to assess very specific aspects of language acquisition. In addition, all available evidence indicates that language used in test situations is qualitatively different from spontaneous language used in natural settings (Roberts, 1970, pp. 7-8).

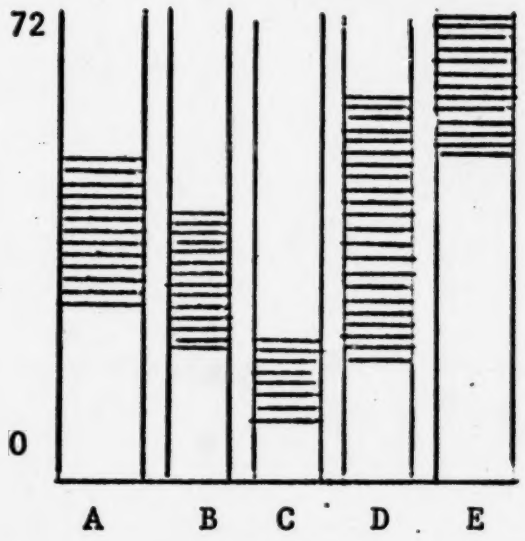
In addition to these general problems, Roberts points out aspects of the tests which may present special problems to speakers of non-standard dialects of English: (1) substantive biases in the content of the test questions and expected responses: the object which a word signifies may be outside the experience of members of a particular subgroup or the object may be named by a different word. (2) verbal style required by the test: for example, the request for "verbal display" required in the ITPA vocal encoding subtest; (3) nonlinguistic factors inherent in the test situation: such as the power relationships which inhere in any test situation but which are particularly potent for a member of any minority group member who is at a special disadvantage vis-a-vis the tester. (4) linguistic aspects of the test: requiring comprehension of standard English and mainstream culture, grammar, semantic connotations, and the implications and presuppositions of sentences (summarized from Roberts, 1970, pp. 21-24).

The actual dialect of the examiner may not itself be critical. Quay (in press) has completed a study of the effects of translating the Stanford-Binet into Negro nonstandard English. William Stewart made the translation and approved tapes of Quay's testers using his translation. For instance, the tester shows a paper doll and says, "Now, show me where de doll hair at." Subject were disadvantaged black 4-year-olds in Philadelphia. No difference was found between scores on dialect and standard versions of the test, nor between different reinforcement (motivation) conditions. Replication of the study with 4-year-olds and 9-year-olds in Chester, Pa. yielded the same results (personal communication, 1970). Her interpretation of the results, (which are in the opposite direction from any experimenter bias), is that dialect-speaking children have more ability to comprehend standard English than has been assumed.

Developing criterion-referenced tests for evaluating children's language is a major need in both research and program development. Such an effort must be related to the conceptualization of objectives for language in early childhood education discussed above. Such an effort will have to separate, but attend to, grammatical knowledge and the child's use of language for intrapersonal and interpersonal ends.

Fraser & Roberts are developing a new and interesting way of comparing language competence across diverse dialect (or even language) communities:

> In identifying the relevant properties of linguistic competence we are not so concerned whether or not a dialect has a passive form or adverbial preposing, etc., but rather in identifying the more basic functional concepts of language, concepts such as topicalization, contrast, anaphoric reference, deletion of redundant elements, subject-verb agreement, negative concord, conditionality, coordination, comparison, and so forth. The question is usually whether a dialect has a particular construction or morphological process; we suggest that the really important question is what such a construction or process is representing in terms of a more basic language concept...
>
> Once we know what we might ultimately expect in the adult speaker of the dialect, we must determine at what point these features appear in the speech and understanding of the child learning this dialect. We might schematize this task in the following way.



Aspect of Linguistic Competence

> where the shaded area represents the period of transition for the average child -- where some children have this concept as indicated by the presense of specific constructions, etc. The lower unshaded area denotes where this concept is rarely found; the upper unshaded area where it is nearly always found. Certainly, this knowledge, whether represented in this form or otherwise, is a prerequisite to determining what concepts to test at what age and how they should appear (unpublished memorandum).

Our new test of syntax was published during 1969, by Laura Lee of the Speech Department at Northwestern University. It is based on the imitation-comprehension-production test used by Fraser, Brown & Bellugi (1963) in lan-

guage acquisition research, and represents one of the first published tests based on that work. See also Cazden (in press) for a compilation of criterion-referenced suggestions for formative evaluation by teachers.

Teaching via television

On Monday, November 10, 1969 "Sesame Street" went on the air after nearly two years of planning. One of the objectives of the program was to teach specific language and pre-reading concepts and skills: identification of letter names and sounds; matching words by beginnings and ending sounds; understanding of relational concepts of size, position, distance, amount, time and sound; and learning vocabulary for body-parts and many aspects of the physical and social environment. Evaluation of the program is now in progress. Preliminary results from three day-care centers in Maine, New York and Tennessee indicated that children who watched "Sesame Street" for the first six weeks of the program gained more than children who didn't watch in recognition of letter names but not of letter sounds (N.Y. Times. 1/28/70). "Sesame Street" will undoubtedly stimulate additional educational television programs for young children and additional research on its effects. For example, Dunn (1970) gave a "systematic presentation of alphabet, alphabet sounds and basic vocabulary by closed circuit television fifteen to twenty minutes once a week for twelve weeks" to 45 children 2-4 years of age. Parents were given a manual of activities which reinforced the presentations with instructions to use the activities at least ten minutes each day." Gains on a test of letter and sound recognition and on the Peabody Picture vocabulary test were significantly better than in the control group. Neither age nor initial verbal IQ was related to gains on these tests.

Language and Reading

To the extent that reading research is theoretically based, the currently popular linguistic theory influences what research questions are asked. These trends, both present and past, can be sampled in "Oral Language and Reading" (Walden, 1969), a series of papers designed to acquaint in-service teachers with linguistics. A growing influence on reading research today is Chomsky's notion of linguistic competence, the knowledge that enables a native speaker to produce, judge, and understand grammatical sentences. When

transferred to reading, this notion appears as the assumption that "an unspecified minimum of competency in producing and understanding spoken language is basic to learning to read" (Bougere, 1969, p. 34). But so far the components of language maturity which are related to reading success have not been conclusively identified.

Research published in 1969, and selected studies from other years which address this topic, will be reviewed under the following headings: phonological competence in relation to beginning reading, syntactic and semantic competence in relation to beginning reading, and matching reading materials to the child.

Phonological competence

In Sound Patterns of English, Chomsky and Halle present evidence for an abstract representation of phonology, which is subject to transformations before it appears as the sounds we hear in oral language. Somehow, this system of phonological rules becomes part of the linguistic knowledge of native speakers, at least speakers of a rich version of spoken language. Read (1970) analysed the "native spelling" of preschool children who write notes and stories before learning conventional orthography.

This reconceptualization of phonology by transformational linguists may have important implications for the teaching of reading. C. Chomsky (1970) suggests several directions for further research: (1) While the beginning reader may expect a one-to-one relationship between phonemes and graphemes, he must abandon this early hypothesis and shift "from a phonetic to a lexical interpretation of the spelling system" (p. 297). We don't know why some children make this shift so easily nor how to help those who don't. (2) Oral reading, which focuses attention on sounds rather than meaning, may be a hindrance to the child, no matter how necessary to the teacher. (3) Enrichment of the child's vocabulary may have important benefits for his ultimate success in learning to read, by providing him with a richer base for inducing the sound patterns of his native language. Usually we think that reading may be a source of vocabulary growth; perhaps the influence extends in both directions. See also Mac Donald (1969) and N. Chomsky (in press).

Furthermore, new questions about the value of the Initial Teaching Alphabet (ITA) come to mind. According to Chomsky and Halle's theory, the ITA would be a disastrous substitution for adults just because all morphological relationships are lost in exclusive concern for similarities in superficial sounds. But if children are more attuned to sounds and less knowledgeable about morphological relationships, the ITA may serve its intended purpose for them. Empirical research on this point is so far equivocal (Warburton & Southgate, 1969).

The fact that 6-year-old children may not possess full knowledge of the sound patterns of English may explain Goodman's finding (1968a) that sounding-out unrelated words is far more difficult for beginning readers than relying on syntactic and semantic cues to decode the meaning of words in context. Goodman suggests that approaches to teaching reading have been word-centered for too long, and should focus instead on reading natural language passages. Biemiller's thesis (in process at Cornell University, cited in Weber, 1968) has similar implications. He finds that context is primary until the novice learns to handle significant information provided by graphic cues.

Chomsky and Halle's book should also dispel the "misconception that spelling determines pronunciation" (Goodman, 1969c, p. 20). Many "errors" that teachers correct in oral reading may be due solely to dialect differences in pronunciation, and such repeated corrections can confuse a dialect-speaking child (Goodman, 1969c; Labov, 1969b). Divergence of dialect speakers from Standard English pronunciation need not be a barrier to reading. Torrey (1969) presents a detailed case study of John, a dialect-speaking kindergartener who had no difficulty in correlating written language with his own phonology, and so learned to read on his own.

Labov (1969b) uses a transformational model of phonology to contend that while the abstract representation of phonology is the same for Black and Standard English, the transformations to surface structure may differ. He predicts that reading difficulties will arise for dialect speakers where phonological and syntactic categories intersect -- for instance, in past tense endings on verbs. Such difficulties are largely due to ignorance of Standard English rules on the part of speakers of Negro Non-Standard English and from ignorance of Negro Non-Standard English rules on the part of teachers and

text writers. Mutual education is recommended as a part of teacher training and reading instruction.

Syntactic and semantic competence

The first impact of the concept of linguistic competence was to refocus attention about children's oral language from vocabulary to syntax (Fleming, 1968). Fleming cautions that there are differences, as well as similarities, between reading and oral language. As he points out, a number of investigations have failed to reveal high relationships between measures of speaking and reading. But Fleming admits that inadequate measures, especially of oral fluency, may have contributed to these results.

On the basis of an empirical study, Bougere (1969) has similar reservations about adopting the linguistic competence/reading hypothesis wholeheartedly. She obtained eighteen language measures by analysing 60 suburban first graders' oral responses to three cartoon and picture stimuli. While she found significant correlations between a Metropolitan Readiness Test and reading achievement scores, the correlations between the experimental measures of language competence and reading achievement were non-significant. Bougere leaves us with three alternate explanations for these results: unreliability of the experimental measures; posession by all the children of the minimal competence necessary for learning to read; or a real lack of relationships between oral language and reading. She asks, "is the conventional wisdom which assumes a relationship between the two really wisdom, or is it rather an unquestioning acceptance of what appears logical and obvious? (p. 54).

Instead of asking what component skills are required in learning to read, Calfee & Venezsky (1969) ask what skills are required to perform well on current reading tests. According to their analysis, current tests are not sensitive to identifiable separate skills; children tend to score about the same on all subtests. Instead, both readiness and achievement tests appear to measure general language competence appropriate to white middle-class families. Thus, before relations between oral language competence and reading skills can be discovered, we must have instruments which reliably and validly measure component skills in each area.

A fruitful method for understanding the reading process is analysis of oral reading errors redefined as "miscues" by Goodman. A common approach is exemplified by Nurss (1969), who related the number of reading errors, and whether they "made sense" syntactically and semantically, to the structural depth of sentences. In a review of the literature, Weber (1969) notes that research of Goodman and his colleagues (1968a, b; 1969a,b,c) is almost unique in taking account of the linguistic function of the elements that are read incorrectly. This corpus of research, both theoretical and descriptive, began in 1963, with the goal of developing a theory of the reading process. To do so, observed responses are compared with the expected responses; "our assumption is that differences are not accidental or random but are generated in the reading process itself" (Goodman, 1968b, p. 1).

According to Goodman's theory at present, reading is a form of psycholinguistic information processing which draws on the total prior experience of the reader. This includes his language competence and his concepts. Three kinds of information are used in the reading process: graphophonic, syntactic, and semantic. Thus, Goodman's taxonomy for analyzing miscues considers the response on each linguistic level from submorpheme through sentence (Goodman, 1969b). Although such an analysis is time-consuming and relies on in-depth study of a few readers, progress toward a theory is promising. For instance, when only ungrammatical miscues tend to be corrected, we can infer that the child is relying heavily on syntactic information in oral reading. In some of Goodman's recent work (1969a), he has adopted notions from transformational generative grammar, and studied grammatical re-transformations of the expected response. He concludes that a close interrelation between meaning and structure is indicated by re-transformation miscues.

So far, we have focused on the controversy over causal influences of a child's language competence on reading success. C. Chomsky (1969) suggests that an important relationship may exist in the opposite direction: success in reading may open the child's mind to considerable language input through the written word. She is now conducting research to test that hypothesis. Because written language differs from oral language in structure and distance

from nonverbal context, that input may have qualitative as well as quantitative significance.

We know much less about children's semantic systems than about their syntax. Important questions go beyond asking whether a child "knows" a certain word to what that word means to him. One dimension of meaning is tapped by word association tests. Entwisle elicited associations for 96 words from Negro and white 1st, 3rd and 5th grade children in the slums and suburbs of Baltimore. Young children give more idiosynciatic responses (show less "commonality") than older children. Further,

> There are far-reaching differences in semantic structures between Negro and white disadvantaged children ... For kindergarten children almost no responses were held in common by the two racial groups, and these are the children whose reading readiness and other verbal behaviors are being shaped for beginning reading instruction in the first grade... The inner city Negro children have semantic systems more convergent with white systems by third grade than at first grade, but even for groups of matched IQ...specific responses and particularly response strengths are widely different (Entwisle, 1968, pp. 15-16).

Matching Reading Materials to the Child

The lack of concern for sentence syntax in beginning reading materials has recently been called into question. Hatch (1969a) expands on the generally accepted statement that the child entering school knows his language: he may know his language, but not all adult structures; if he speaks another dialect, he will know his laungage rather than the Standard English of his reader. Making a strong distinction between the abilities to produce and comprehend language structures, Hatch studied developmental changes in the use of certain syntactic structures by children 5-7 years old. In a subsequent publication (Hatch, 1969b) she also looked at the ways in which the syntax of young children differs from that used in beginning reading books. Production difficulties were found for the mass/count noun distinction and the case of personal pronouns. Difficulties in comprehending time connectives and conditional clauses were also noted. The reading materials investigated included these structures, and did not seem to follow any particular sequence in introducing them.

> The burden of proof, however, still remains with the investigator who claims that this mismatch of the child's language with the language of reading books, and the random introduction of syntactic structures in the reading books, causes interference in the reading process (Hatch, 1969a, p. 81).

Some evidence for this hypothesis of a syntactical mismatch comes from the observation that a child's guesses about unfamiliar material agrees with his own syntactic forms (Torrey, 1969). Tatham (1969) also notes that 2nd and 4th graders score higher on a comprehension test written with patterns which appear frequently in their oral language than with patterns which appear infrequently, even when vocabulary, content and grammatical complexity are controlled.

An important book which urges the design of special reading materials for the Black-English speaking child was published in 1969: Teaching Black Children to Read edited by Baratz & Shuy. Differences in phonology (Labov, Goodman) and syntax (Baratz, Shuy) are discussed, along with the role of orthography in reading (Fasold); and several examples of linguistically appropriate passages are presented (Wolfram & Fasold, Stewart). The book focuses on differences in production between Black and Standard English; less is said about how differences in comprehension interfere with reading. Since it is generally agreed that speakers of nonstandard dialects understand more standard English than they speak, this is an important question.

Torrey (1969) says of John, the Black-dialect-speaking child she studied, that the type of errors he made in oral reading "suggest that John expected to find in print the things he would normally say" (p. 555). This raises the critical question which will be answered only by further investigation of young readers, Black and white: a child holds certain expectations about the relation between reading and spoken language (Ryan & Semmel, 1969). Should he expect to find in print what he would normally say? Or is it sufficient that he can understand, and has heard other people say, the kind of things he finds in print?

During 1969 at least two sets of readers written in nonstandard dialect became available. The Education Study Center in Washington D.C., has produced one set of these books and a companion set of "control" books with identical content and pictures but written in Standard English. The first book, Ollie, begins as follows in the two versions:

Here go Ollie.	This is Ollie.
Ollie have a big family.	Ollie has a big family.
He have three sisters.	He has three sisters.
A sister name Brenda.	A sister named Brenda.

(Educational Study Center, 1970, pp. 1-3).

in current tests, these two sets of readers are being used with different children in an attempt to determine whether these initial teaching materials in the child's native dialect aid beginning reading.

The Chicago Board of Education has also produced a set (Davis, Gladney & Learerton, 1968, 1969). In books 1-3 each story is presented twice, first in "Everyday Talk" and then "School Talk." Books 4-7 are written in two editions, the "Everyday Talk" book and the "School Talk" book. All children can use both versions. Contrasting sentences from books 1-3 are:

I got a mama.	I have a mamma.
My momma she pretty.	My mama she's pretty.
My mama work.	My mama works.

(Davis, Gladney & Learerton, 1969, p. 4).

It will not be easy to answer the important question about whether materials written in dialect do help. It is always hard to isolate aspects of a complex situation and keep all other factors controlled, and this situation is particularly complex. If the purpose of these readers is to provide a match between the oral language of the reader and his initial reading materials, how can we assure such a match, given the range of variability within any Black community ? Does it matter that the use of such readers will increase racial segregation during reading instruction? What will be the attitudes of children, teachers (black and white) and parents to these materials? What are effective ways to gain acceptance for them at least for an experimental period? These questions, and more, remain to be answered. At least there are now materials with which to start. Obviously, if readers such as there are used, corresponding tests of reading achievement will also be needed (Wasserman, 1969).

Readers written in Non-standard dialect are not the only solution to the problem of the "match." Perhaps one can teach standard speech patterns before the child learns to read. So far, there is no evidence of success here. For instance Rystrom (1968) found that neither oral language nor reading was

affected by standard English instruction. Serwer (1969) offers new arguments for using individually dictated stories and experience charts in which the teacher faithfully records each child's language as spoken (in conventional spelling). In his presential address to the American Psychological Association, George Miller (1969) recommends Sylvia Ashton Warner's particular way of using the child's own words for beginning reading in order to heighten interest and measuring for all children.

Finally one can decide that structural interference is not as important as functional interference, and that efforts to improve reading should be concentrated on content and context. In content, there may be a danger of assuming too narrow a definition of relevance. In a brush-shelter school in Rough Rock, Arizona I saw a Navajo woman standing in a lunch line engrossed in the story of Marjorie Flacks' The Story of Ping (Viking Press, 1933). It is a tale of a duck on a Yangsee River houseboat which I was told is a favorite with Navajo children. On any superficial criterion, nothing could be more irrelevant to children's living on a desert than life on a houseboat. Yet at some deeper level, meaning was caught. Jones (1970) speaks of "conceptual" relivance rather than "cultural" relevance. That seems the better term. It can encompass Claudia Kernan's remark (personal communication) that black students in her own high school English class liked Julius Caesar "because Cassius was such a great signifier." As for context, Labov believes that functional interference is probably greater than structural interference, and has conducted one important study of the relation between street gang participation and growth in reading achievement (1969c).

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